

AUG 30 1982

Mr. Thomas Shook
Pine Bluff Arsenal
Pine Bluff, Arkansas 71601

Dear Mr. Shook:

We have reviewed the final report on preparation of closure and post closure and contingency plans for Pine Bluff Arsenal.

The overall plan appears well conceived and preliminarily addresses many of the apparent concerns we have regarding this facility. We support your efforts to obtain funds to perform these sorts of activities.

We would like to offer the following general comments for your consideration:

1) Hydrogeological Investigation

The initial closure plans submitted by SCS Engineers allude to the need for further groundwater investigations and subsurface characterization. We certainly agree that a great deal of this information will be needed prior to writing final closure plans for most of the sites, however the funding for these tasks was not easily identified in the SCS report. It has been our experience that subsurface investigations at abandoned waste sites can be a considerable expense. The following are specific items which may need to be included in your detailed investigation budget:

a) Ground Penetrating Radar. This is particularly useful when defining the extent of buried wastes of the type described in this report. It is also a valuable tool when searching out the location of suspected abandoned waste sites.

b) Surface and Downhole Geophysics. This is used in defining the stratigraphy of any given site. Considering the distribution of sites throughout the Arsenal, we would recommend mapping the stratigraphy of the complete facility. A map correlating the stratigraphy units of the near surface environment will be critical to any monitoring of abatement efforts which are undertaken.

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2) Waste Characterizations

In order to develop adequate safety plans, as well as predict the movement, dispersion and attenuation of waste in the subsurface, it will be important to have a better knowledge of the physical state and chemical constituents of the waste present at each of these sites. Accordingly we recommend identifying funds for the purpose of further sampling and analyzing any of the waste sites when the specific character of the waste is unknown.

3) Waste Disposal

In some instances it was unclear in the SCS report which wastes would be left in place, which would be removed, incinerated or stabilized. We expect that the next phase of the closure plan will delineate the volume and types of waste at each site and the plan for ultimate disposal of each.

4) Safety Plan

While we realize that the SCS report was not intended to provide a specific safety plan for the closure activity, it should be recognized by all parties that safety at this site will be a particularly difficult problem due to the diversity of wastes which will be encountered. In addition to the normal hazards of spent ordinances there may be need for control of particulate matter at dump sites. The eventual safety plan will need to address these issues not only during remedial activities but also during site investigations.

5) Facility Monitoring

Considering the distribution of abandoned and active waste sites throughout the Arsenal it may be advisable to establish a permanent facility monitoring system to detect contaminants in the major drainage ways leading offsite. Such a program should include surface wastes and stream sediment samples taken on a routine basis for all major drainages entering and leaving the Pine Bluff Arsenal.

6) New Data

A considerable amount of sampling has been recently undertaken by Ecology and Environment, Inc., under contract by the EPA. This information is available and should prove useful in designing further investigations of this facility.

CONCURRENCES

SYMBOL								
SURNAME								
DATE								

Finally, the EPA on July 26, 1982, published new permitting requirements for land disposal facilities disposing of hazardous waste. These regulations contain a good description of the best technical approaches for limiting leachate generation and contaminant transport from land disposal facilities. You may wish to consider these approaches when writing the final closure plan for the Pine Bluff Arsenal.

Thank you for the opportunity to review this report. We will look forward to receiving a copy of the detailed closure plan when it is available. If you have any questions regarding these comments feel free to contact Dwight Hoenig of my staff at (214) 767-9710.

Sincerely yours,

William B. Hathaway
Deputy Director
Air and Waste Management Division

cc: Dr. Bob Blanz, ADPCE

6AW-SE:BDeVos:wg:8/27/82X4075

CONCURRENCES							
SYMBOL	6AWSE	6AWSO	6WE	6AWDEP			
SURNAME	DeVos	Hoenig	Highland	Hathaway			
DATE	8/30	8/30/82	8/30/82				

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE August 20, 1982

SUBJECT Pine Bluff Arsenal (PBA) Closure Plans

FROM *Tim C. Perdue*
Tim C. Perdue, E.S.
Operations Section (6AW-SO)TO Dwight R. Hoenig, Chief
Operations Section (6AW-SO)*August 22, 1982*

I have reviewed portions of the Pine Bluff Arsenal (PBA) site closure plan. The document represents plans to close and post monitor thirty-one smaller segments situated on the PBA grounds. Their proposed methods are adequate however in order to accomplish their goals they must assume that certain things are true or will or will not occur.

My general comments and observation's are listed below. I have also attached short summaries of some of the individual sites.

1. Why wasn't this facility assessed using the Department of Defense's (DOD) Hazard Assessment Ranking Methodology (HARM). The HARM, which was used for Tinker Air Force Base, is a good system that will allow them to prioritize and evaluate all routes of potential contamination for each site.
2. From my evaluation's it appears that each individual site needs a run on/run off diversion system. It may be beneficial to devise a system that drains the site as a whole instead of segments.
3. There was no material included to support the assumption's being made. However, they did reflect on some specific sites under their additional investigation section.
4. Has there been any thought of future use for the base areas that might affect today's closure activities?
5. There are a large number of segments in this closure plan and each segment has different attributes as well as problems. Have they considered a closure plan that would utilize existing segments facilities (such as incinerators, treatment plants etc.) planned for closure to alleviate the waste material of the other segments, (i.e. any waste that can be eliminated by incineration instead of drumming and burying.)
6. There was one assumption made that was not very consistent. They assumed an average depth of pond/lagoons as 3 ft, but all the sites mentioned that I reviewed were 6ft or deeper.
7. They also assume that after closure of filled areas and pits that there would be very little or no settling, is that a good assumption? This assumption affects the cost and management of post closure activities.

There is a section on site geology included which I did not review. You may want to use the short summaries provided and review a few along with the site geology.

SUMMARY PINE BLUFF ARSENAL (PBA)

SITES

1. Site 7 old toxic storage yard

pesticides
Storage stratified sand/clay
Drums shallow ground H₂O (spings)
DDT, malathion, diazionon

Closure plan-run on run off control
post closure

2. SITE 11a - Sediment retention basin (SRB) No. 1

Sediment rrap for DDT production area
Remedy Unlined - Backfill impoundment - no sludge removal
Stratified sand/clay
groundwater 8-10 ft.
closure/post closure

Question: Will water from impoundment be treated?

Note: You would have to assume that the basins lowest level is
in clay also. Would fine sediment plug sand zones?

3. SITE 11b - SRB No. 2

Same as SRB No. 1
Second in series of two

4. SITE 11C - SRB No. 3

Same as #1&2

5. SITE 26 - Drop Tower Test Basin (Standby)

concrete lined basin 6' deep
barium, lead, zinc, DDT, dye (surrounding area shallow)
liquids are drained sent to industrial treatment facility
solids drummed and sent to proposed landfill.

Remedy - Complete removal of all hazards to proposed secure landfill.

Questions: - Is proposed secure landfill finished and in use?
What is nature of solids, physical state/reactivity?

Additional

Sampling: - Take core samples from excavated area.

6. SITE 31b - Grenade Test Basin (standby)

No preliminary investigations have been done on soil
contamination.
located next to pond.
(Same conditions as site 26)

7. SITE 35 - North Oxidation Pond

Clay lined
19 acre lagoon

- Domestic sewage/waste from research center
Drain H2O send to treatment plant
Remedy: leave liner in tact - remove sludge and dry.
8. SITE 36. Industrial Sludge lagoons
Lined lagoons (two)
As, Ed, Cr, Ba, Pb, Hg.
Silty sands and lean clays
Groundwater 18'
(Same as site 35)
9. SITE 40. Incenerator Complex
Thermal destruction unit
Remedy: Removal of surrounding contaminated soils
10. SITE 42. Water treatment backwash pond
Industrial waste water
Concrete lined basin
Unknown type of contaminants
Remedy : Drain basin, flush, seal off influent line.
11. SITE 43. White phosphorus pollution abatement facility
Extent of contamination unknown
insufficient data to make good evaluation
otherwise closure post closure procedures look ok.
12. SITE 7b - Lewisite Disposal Area
Unlined lagoon
close proximity to surface water (Phillips Creek)
As, Se
Springs and water seeps in area
Remedy: in-situ encapsulation, post closure monitoring
13. SITE 7c. - Mustard Agent Burning Yard
Near surface water
Air problem-emits fumes
Low metals As, Cr, Hg, Zn
Fine grain sediments/Jackson group
Remedy: Same as 7B
14. SITE 7d. - Toxic Storage Yard Borrow Pits
Two pits
Remedy: Same as 7b
15. SITE 10. - West bombing mat and waste storage yard
concrete pad used for product testing
hazardous waste storage prior to incineration
possible excavations into groundwater, partially in
flood plain of Phillips Creek.
some Pb, Hg.
Remedy: Run on/run off diversion for mat, landfill stds for
burn area.

16. SITE 17. Product assurance test range and dump site
shallow, lined basin
close proximity to surface water (Yellow Lake)
Metals - As, Pb, Hg.
Pesticides - DDT
Steep Slopes
- Remedy: Removed contaminated soils, landfill
stabilize slopes
17. SITE 20a. Depot south burning pit
Waste drums (rusting) piles
Pb, Cd, Ba.
fat & lean clays
bounded by swampy wetland area.
- Remedy: run on/off control/ use natural clay as liner
18. SITE 23a. White smoke test pond
As, Pb, Hg, low Ph
pond 1.5 acre
- Remedy: drain pond; treatwater, install hydraulic leachate
collection systems
19. SITE 24. Thermite Disposal
open dump
Ba, Pb, Hg
27-30 ft groundwater
contaminated to 10 ft.
- Well defined contaminated zone
- Remedy: close as landfill